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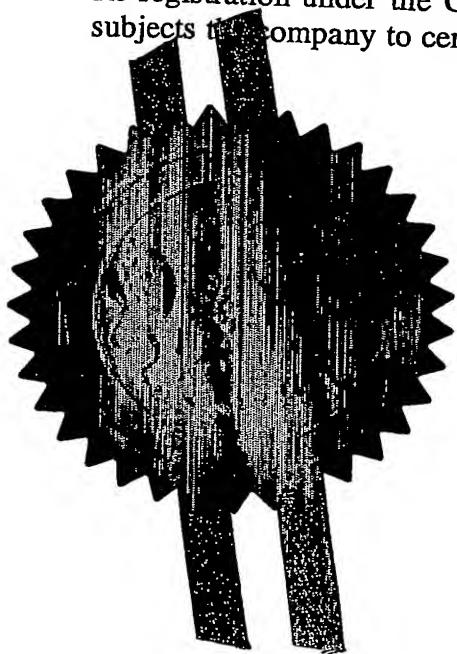
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Dated   18 May 2004

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An Executive Agency of the Department of Trade and Industry

The **Patent Office**	Request for grant of a Patent
	Form 1/77 Patents Act 1977

1	Title of invention
	Voicemail to text (SMS/MMS or other relevant graphical representation) and associated User Interface

2 2 APR 2003

2.	Applicant's details	
[X]	First or only applicant	**0309088.3**
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2d	Corporate Name
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2e	Surname
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2f	Address
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3 Address for service

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Agent's postcode	N10 3JR
Agent's ADP Number	C03274

0727045 7002

4 Reference Number

Voicemail Mgmt (UK)

5 Claiming an earlier application date

An earlier filing date is claimed:

Yes ☐   No ☒

Number of earlier
application or patent number

Filing date

15 (4) (Divisional)	8(3)	12(6)	37(4)
☐	☐	☐	☐

6 Declaration of priority

Country of filing	Priority Application Number	Filing Date

7 Inventorship

The applicant(s) are the sole inventors/joint inventors

Yes ☐   No ☒

8 Checklist

		Continuation sheets	
Claims	0	Description	3
Abstract	0	Drawings	0

Priority Documents	Yes/No
Translations of Priority Documents	Yes/No
Patents Form 7/77	Yes/No
Patents Form 9/77	Yes/No
Patents Form 10/77	Yes/No

9 Request

We request the grant of a patent on the basis of this application

Signed: *Origin Limited*   Date: 22 April 2003

(Origin Limited)

Calle de Villanueva 15, 6o
Madrid 28001
Spain

18th April 2003

Statement of Origin of Product Concept

Voicemail to Text (SMS/MMS or other relevant graphical representation) and associated User Interface

To Whom It May Concern:

I, Daniel Michael Doulton Torma, and my partner Christina Florence Domecq Peck Cook, have today 18th April 2003, invented a simple but effective way of improving how we receive and manage voicemail. This document records this idea as uniquely ours and that we are in the process of Patent Search and filing for Patent(s).

Concept - seeing your voicemail for the first time.
Instead of having to dial up and listen to your voicemail, you simply have it converted into text (or multimedia/graphical format) messages for you to read. As a user, you will have the choice to either listen to your messages, or have them converted from speech to text and sent to you. The option to hear the original voicemail when reviewing the text is always available.

The key features are first, that you can now read your voicemail, and second, that you now also have a visual/physical user interface to manage voicemail which much improves the ergonomics when accessing, reviewing and managing your voicemail. The user is no longer having convert audio prompts into the correct pressed on their phone keypad.

The most obvious application is on mobile phones where the user is typically mobile when receiving their voicemail and finds it difficult to write down any key information or messages they've received. With the messages converted to a text or relevant graphical format, the user will already have everything they wanted written down and won't need to switch usage modes from holding the phone to their ear and pulling it away in order to see the keypad and then back to hear if that action worked and await further aural prompts. The development of advanced (PDA) GUI and Multi-media capacity in 2.5G and 3G handsets heightens the contextual relevance of this idea.

In today's context this means converting your phone's voicemail and either SMS'ing it or MMS'ing or emailing it to you to read. Clearly, the voice recognition

Voicemail to Text Conversion Concept Registration

and post processing services required would have to be of a very high calibre to ensure a high level of accuracy in conversion. .

Some problems this solution solves:

GUI not voice prompts and keypad:
In essence, giving the user a GUI/TUI rather than the more difficult interface of voice prompts and phone keypad makes it faster and easier for a user to navigate, read and control their messages. It is hard enough listening and remembering which keys to press to erase, rewind, store, forward, etc.,, a voicemail when switching between holding to the head to listen and then down to see the keypad and select an option.

Text not voice:
When dealing with voicemail, it is often more practical to see what message a caller may have left rather than try to listen to it 2 or 3 times before getting vital parts.

There is also a very important human factor in converting the voice message into text: we can scan text faster than listen and if visually presented, the means of finding key information (e.g. a quickly spoken number or poorly described instruction), reviewing and processing (e.g. storing, forwarding, converting, etc...) is much easier. On a sociological level, sometimes we literally don't want to hear from someone and text is a faster way of dealing with this.

Potential Solution

User Interface & Controls

Now that you have a GUI to work with, simple controls a user would have in addition to the exiting ones for messaging could include:
- Message folders – this might be integrated into the device's existing messaging application as found on 2.5G and 3G terminals.
- Listen to actual voicemail and manage with audio controls, e.g. play, ffw, rew, stop/pause, erase, etc...
- See time and date of message and caller's name and/or phone number – one click to call them back
- Forward the message to another person or store it in folders as above
- Intelligently tag information and relate it to existing data or services. E.g.
  - a phone number requires one click to call that person or links to that name in phonebook or allows easy addition of new number to their phonebook
  - an email address/web address is hyperlinked for instant connection or storage

Voice to Text Conversion

Wherever hosted, the voice to text (graphical media) conversion process needs to be robust enough to deal with a wide range of callers, accents, noise environments, vocabulary and other human speech features. Current state of the art voice to text recognition systems offer these capabilities (e.g. Nuance, Dragon) and some are dedicated to telephony and have likely solved many of the problems mentioned. We have previously done business with companies offering this service for professionals sending in their recorded voice notes (e.g. lawyers, doctors, etc...) for conversion into text documents. Here they employed massive processing power on which they ran state-of-the-art recognition algorithms and post-processing text, spelling and grammar filters. In addition, they had humans checking documents that were flagged as having problems during conversion so a human could perfect the conversion. This acted as feedback to the conversion engine (algorithms) which would then adapt to improve their future accuracy.

Service Availability

The initial idea is to offer this to users of mobile phones and other users of mobile devices connected to wireless networks as they suffer the worst interface for managing and listening to voicemail. The availability of SMS and its wide use means it will be a readily accepted idea and the arrival of richer messaging technologies with 2.5 (GPRS, EDGE) and 3G (UMTS or WCDMA) such as MMS provide an excellent environment in which to develop and deploy this service. Clearly, its application might be far wider spread than this, say to office use with fixed telephony (e.g. converting all voicemail from your desk phone number into text inside email) and other business applications.

Competing Solutions

We have so far found no existing reference either to this idea or implementations of it. The closest market is Unified Messaging, but of all the products searched, none so far offer the voice to text conversion for voicemails of any type, rather they all offer the reverse process of text to voice for email and text messages.

ENDS